
Current status of tissue engineering in pediatric urology.

Journal: Curr Opin Urol

Publication Year: 2008

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PubMed link: 18520763

Funding Grants: Training Grant 1

Public Summary:

PURPOSE OF REVIEW: To summarize the most current clinical applications of tissue engineering and their relevance to pediatric urology. **RECENT FINDINGS:** Successful clinical application of engineered bladder tissue substitutes has led to an ongoing phase II clinical trial. The use of engineered tissue substitutes in hypospadias reconstruction has also been applied clinically, but has not yet gained wide acceptance. Cell injection therapy for rhabdosphincter regeneration has shown promise in adult stress urinary incontinence patients, but its applicability to the pediatric population has not been reported. To date, engineered tissue substitutes for reconstitution of the corporal bodies of the penis have been successfully applied in animal models. Renal replacement therapy has shown progress with the clinical application of human progenitor cells in hemofiltration units, and additional studies may ultimately render the engineered intracorporeal renal replacement unit a reality. **SUMMARY:** The field of tissue engineering seeks to arm the clinician with therapeutic options that rehabilitate or reconstruct damaged organs. Recent clinical trials may transform reconstructive surgery as well as current surgical practice in patients with neurogenic bladders and urinary incontinence.

Scientific Abstract:

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